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| 09/273,448 | 03/22/1999 | SHINGO OHKAWA | 1185.1044/JD | 7146 |

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| EXAMINER | |
|---|---|
| NGO, HUYEN LE | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2871 | |

DATE MAILED: 06/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 09/273,448 | OHKAWA, SHINGO | |
| | Examiner | Art Unit | |
| | Julie-Huyen L. Ngo | 2871 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *18 May 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *13-22 and 25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *13-22 and 25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☑ Other: Fig 2

## DETAILED ACTION

### *Continued Examination Under 37 CFR 1.114*

A request for continued examination under 37 CFR 1.114 was filed in this application after appeal to the Board of Patent Appeals and Interferences, but prior to a decision on the appeal. Since this application is eligible for continued examination under 37 CFR 1.114 and the fee set forth in 37 CFR 1.17(e) has been timely paid, the appeal has been withdrawn pursuant to 37 CFR 1.114 and prosecution in this application has been reopened pursuant to 37 CFR 1.114. Applicant's submission filed on March 20, 2006 has been entered.

### *Response to Amendment*

Applicant's arguments with respect to claims 13-22 and 25 based on the Response filed on March 20, 2006 have been considered; however, the same prior art and ground(s) of rejection can be applied.

### *Drawings*

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the features recited in claim 13, "***the first slopes <u>mainly</u> receive light from said first primary light source and said second slopes <u>mainly</u> receive light from said second primary light source***," must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

It appears from figure 2 that **<u>both</u>** first and second slopes receive light from the <u>same</u> light source (1), and the same slope receives light form different light sources (2). See Attached figure 2.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement-drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the examiner does not accept the changes, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Specification***

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter recited in claim 13 regarding "***the first slopes mainly receive light from said first primary light source and said second slopes mainly receive light from said second primary light source***". See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction is required.

### *Claim Objections*

Claims 13-25 are objected to because of the following informalities recited in claim 13:

The recitation regarding "***a prismatic light control member having a great number of pairs of first and second slopes to control directivity of output illumination light is disposed along said second emission face so that said first slopes mainly receive light from said first primary light source and said second slopes mainly receive light from said second primary light source***" in claim 13 is unclear. It would be clear to recite that: __**a prismatic light control member having a great number of pairs of first and second slopes is disposed along said second emission face so that said first slopes mainly receive light from said first primary light source and said second slopes mainly receive light from said second primary light source to control directivity of output illumination light from said second emission face**__.

All claims that are depended from the above-mentioned claim and are not specifically discussed above are objected as bearing the defects of the claim from which they depend.

Appropriate correction is required.

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 13-16 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okuda et al. (US5963280A) in view of Oyama et al. (US5808708A) and further in view of Miyashita et al. (US6011602A).

With respect to claims 13 and 25, Okuda et al. teach (Fig. 4, col. 16, line 62 to col. 17, line 17) a liquid crystal display including a liquid crystal display panel and a surface light source device of side light type for backlighting of the liquid crystal display panel, said surface light source device comprising:

- a first guide plate
- a first primary light source 17 with red color disposed beside the first guide plate
- a second guide plate
- a second primary light source 8 with blue color disposed beside the second guide plate
- said first guide plate having two major faces to provide a first emission face and a first back face and having a minor face to provide a first incidence end face which is supplied with illumination light from said first primary light source 17
- said second guide plate having two major faces to provide a second emission face and a second back face and having a minor face to provide a second incidence end face which is supplied with illumination light from said second primary light source 8
- said first guide plate and said second guide plate being laminatedly arranged so that said second back face extends along said first emission face

- said first incidence end face and said second incidence end face being located oppositely to each other across said laminatedly arranged guide plates,
- a light control member (the scattering layers 14 and 16) to control directivity of output illumination light is disposed along said second emission face.

However, Okuda et al. fail to disclose the following features recited in claims 13 and 25:

1) said light control member is a prismatic light control member having a great number of pairs of first and second slopes to control directivity of output illumination light is disposed along said second emission face so that said first slopes mainly receive light from said first primary light source and said second slopes mainly receive light from said second primary light source, and

2) a driving circuit to drive the first primary light source and the second primary light source

Miyashita et al. teach (Figs. 23-25) forming a prismatic light control member 321 with a great number of pairs of first and second slopes to control directivity of output illumination light, said prismatic light controller member is disposed along an emission face of the light guide 307. The first slopes mainly receive light 305 from one side/direction of the light guide or from the light source 322, and the second slopes mainly receive light 306 from another side/direction of the light guide to control the

directivity of the light illuminated from the light guide for improving the frontal illumination performance.

Therefore, it would have been obvious for one of ordinary skill in the art to modify Okuda surface light source device with Miyashita's prismatic light control member 321 having a great number of pairs of first and second slopes to control directivity of output illumination light, and to dispose said prismatic light control member along the second emission face of Okuda's second guide plate so that the first slopes mainly receive light from said first primary light source 17 and said second slopes mainly receive light from said second primary light source 8 for improving the frontal illumination performance, as taught by Miyashita et al.

Although Okuda et al. do not clearly disclose a driving circuit to drive the first primary light source and the second primary light source. One of ordinary skill in the art would have known that there must be a driver circuit to drive/control the light sources for adjusting the intensity of output light from the light source or for selectively outputting a specific color display as evidenced by Oyama with the control circuit 16 for controlling the light sources 3 on the back surface of the light guiding plates 4114 (Figs. 2, 3 and 8, col. 1, lines 26-33, col. 7, lines 24-27 and col. 11, lines 26-28).

Therefore, It would have been obvious for one of ordinary skill in the art to employ a driver circuit such as the control circuit 16, as taught by Oyama, to drive or

control the first primary light source 17 and the second primary light source 8 in the surface light source device of Okuda LCD for adjusting the intensity of output light from the light source or for selectively outputting a specific color display.

With respect to claim 14, it would have been obvious for one of ordinary skill in the art to selectively turning off one of the first and second primary light sources to adjust the intensity of light output or for selecting a specific color display. Therefore, the driver circuit in Okuda in view of Oyama LCD device would obviously capable of turning off only one of the first and second primary light sources.

With respect to claims 15 and 16, Okuda et al. teach (Fig. 4) that said first and second guide plates have wedge-shaped cross sections so that said first and second incidence end faces are located at thicker ends of the cross sections, respectively.

Claims 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okuda et al. in view of Oyama et al. and Miyashita et al. as applied above to claims 13-16, and further in view of Ohkawa (US 5997148).

Okuda et al. in view of Oyama and Miyashita LCD device fails to disclose the features recited in claims 17-20.

Ohkawa teaches (figs. 1 and 2 and col. 5, line 32-col. 6 line 14) forming a great number of projection rows 102 running approximately at right angles with respect to the incidence end face 12A on the lower edge/back face 12B of a guide plate 12 for

preventing the reflective appearance have a possibility to influence the directivity of characteristic of emission light from the emission surface 12C of light guide 12. Doing so would suppress the appearance of bright light entering the vicinity of the lower edge EI and provides output light having high uniformity.

Therefore, it would have been obvious for one of ordinary skill in the ad to form a great number of projection rows running approximately at right angles with respect to the first incidence end face on the first back face of the first light guide in Okuda in view of Oyama and Miyashita LCD device for suppressing the appearance of bright light entering the vicinity of the lower edge and provides output light having high uniformity, as taught by Ohkawa.

Claims 21 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okuda in view of Oyama and Miyashita et al. as applied to claim 13, and in further view of Arai (US6049649).

Okuda et al. in view of Oyama and Miyashita LCD device fails to disclose the features recited in claims 21 and 22.

With respect to claim 21, a prism sheet (light control member) is conventionally used to modify the preferential propagation direction such as frontal direction of output light in a surface light source device such as the light control members 4/14 disclosed by Arai (figures 3,4 and 11-18). This light control member is provided with slopes on the inner reflection surface facing the emission surface of the guide light to modify the

directivity of illumination output light from the light guide and for uniform illuminating of the output light.

Therefore, it would have been obvious for one of ordinary skill in the art to employ a light control member having the slopes provided on the inner reflection surface in Okuda in view of Oyama and Miyashita LCD device to modify the directivity of illumination output light so that illumination output light originated from any one of the first and second primary light source is directed to the frontal direction with respect to the second emission face, as taught by Arai.

With respect to claims 22, the light control member employed in Okuda LCD in view of Oyama, Miyashita and Arai as applied to claim 21 above would obviously has an inner face provided with a great number of projection rows running approximately parallel with respect to the second incidence end face, wherein each of said projection rows including a pair of first and second slopes for modifying the directivity of illumination output light from the second emission surface of the second guide plate.

***Response to Arguments***

Applicant's arguments filed on March 20, 2006 have been fully considered but they are not persuasive.

Applicant's ONLY arguments are:

The cited references, particularly Miyashita does not disclose that the first slopes mainly receive light from said first primary light source and said second slopes mainly receive light from said second primary light source as claimed in claim 13. The

Examiner appears to confuse the claimed term "light source" with sides of the "light guide," and the light 306 is not supplied illumination light from either of the light sources. Instead, the light 306 comes from "outside of the liquid crystal display system."

Examiner's responses to Applicants' ONLY arguments are:

Applicant is to note that the Examiner merely relied on the teaching of Miyashita et al. to form a prismatic light control member (321) with a great number of pairs of first and second slopes to control directivity of output illumination light from and along the second emission face of the second light guide plate in Okuda surface light source device as set forth above in the rejection of claim 13.

Also Examiner does not confuse the claimed term "light source" with sides of the "light guide," although the light 306 is not supplied illumination light from either of the light sources. The Examiner simply show that the first slopes receive light 305 from one side/direction of the light guide 307 or the light source 322 (see figures 23 and 24), and the second slopes receive light 306 from another side/direction (see figure 25) to control the directivity of the light incidence on the first and second slopes from different directions for improving the frontal illumination performance.

Note that once Miyashita's prismatic light control member 321 is disposed along the second emission face of Okuda's second guide plate (see figure 4 of Okuda), the first slopes would mainly received light from said first primary light source 17 and said second slopes would mainly received light from said second primary light source 8 for

improving the frontal illumination performance in Okuda surface light source device, as taught by Miyashita et al.

Therefore, Okuda surface light source device as modified by Miyashita would obviously comprises the claimed features recited in claim 13 for having the first slopes mainly receive light from said first primary light source 17 and said second slopes mainly receive light from said second primary light source 8.

***Contact Information***

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Julie-Huyen L. Ngo whose telephone number is (571) 272-2295. The Examiner can normally be reached on M-Thursday.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's Supervisor, Mr. David Nelms can be reached at (571) 272-1787.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-1562.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the

Electronic Business Center (EBC) at 866-217-9197 (toll-free).

June 7, 2006

***Julie -Huyen L. Ngo***
***Primary Examiner***
Art Unit 2871

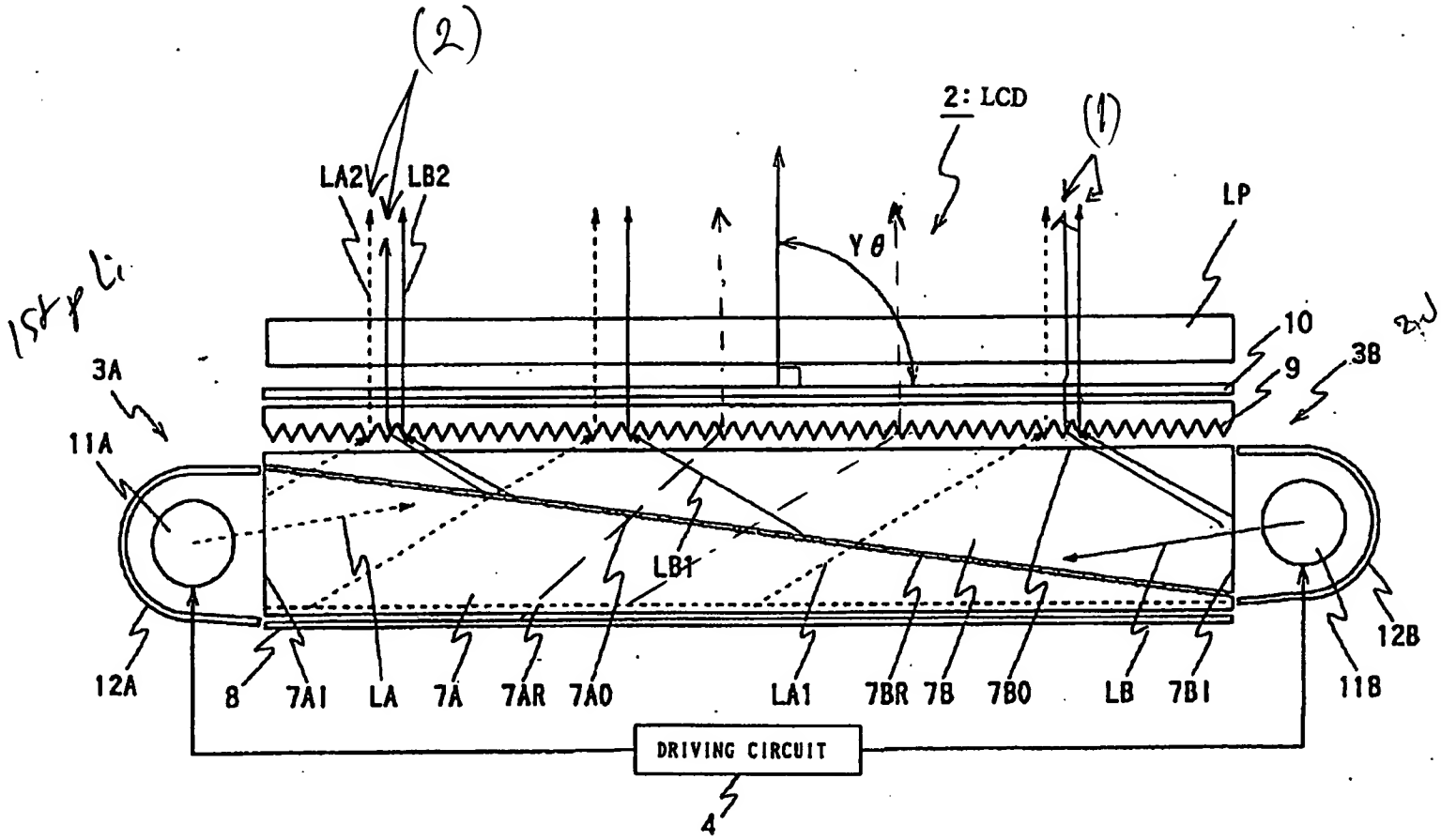


Fig. 2

Attachment (please scan and send)